

Aside from a local cold wave at Flagstaff, Ariz., on the 11th, the only cold wave of the month occurred in eastern New Mexico on the 29th and 30th, when a low which was central over northeastern Arizona on the morning of the 29th divided, one center advancing rapidly to extreme southern Texas, the other remaining over southwestern Colorado. Cold wave warnings were not issued, but warnings of colder in New Mexico, with frost or freezing temperature, were distributed on the morning of the 29th.

Warnings of frost or freezing temperature which were generally verified were issued for portions of the whole of New Mexico, on the 6th, 7th, 8th, 10th, 11th, 12th, 15th, 21st, 24th, 25th, 26th, 27th, 28th, 29th, 30th, and 31st; for south-central and southeastern Arizona on the 11th, 21st and 29th, and for the valleys of western Colorado on the 21st, 22nd, 24th, 25th, 26th, 27th, 28th, 29th, 30th, and 31st.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT

The month of March gave exceptionally high temperatures over all parts of the forecast district. At many stations in California the month was the warmest March of record and at some stations in the State it was both the warmest and driest March of record. Only one frost warning was required for California, but warnings of frosts and of freezing temperatures were issued on a number of days for Nevada, Idaho, Washington and Oregon, because high temperatures during March and the previous months forced vegetation to advance far beyond what it normally does at this season. The few storm warnings were restricted to the coast north of Cape Blanco; i. e., the Washington and Oregon coasts.

Among the outstanding facts noted in regard to the past winter are these: (1) No cold-wave warning was issued or necessary for any part of this forecast district and (2) the periods of general rains in California have followed in all instances the disintegration of the area of high pressure that normally is central some distance off the California coast. A notable instance of this occurred during the latter part of January. The barometer had stood high off our coast and the weather consequently remained dry during the time. Rains were general and heavy in the State while the barometer stood low over the region where it is normally high and ceased quickly after the pressure rose above normal. A similar instance occurred after the end of March. This will be referred to in the report for the month of April.—*E. H. Bowie*

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RIVERS AND FLOODS

By H. C. FRANKENFIELD

The great ice gorge that had prevailed since January 8 in the Allegheny River of Pennsylvania gave way and passed down the river during the early evening of March 23. A special report on this gorge appears on page 106 in this REVIEW.

Moderate floods occurred during March in the rivers of the Southern States, except the lower Mississippi, the Illinois, and Wabash Rivers and their tributaries, the Grand and Saginaw systems of Michigan, and portions of the Maumee system of Ohio. There were also moderate local floods in the Sabine, Trinity, and Little Rivers of Texas. All of the floods were relatively unimportant, although only absence of heavy rains prevented a decided flood in the rivers of southern lower Michigan and northern Ohio. As it was, the melting of snow and ice

due to the high temperatures of the last decade of the month caused only moderate flood stages, and the losses were very small, although many business interests suffered considerable inconvenience for a short time.

Warnings of the floods were ample, and the aggregate losses were very small. The totals reported for the large territory east of the Mississippi River were only \$32,900, while those from the Texas floods were \$54,000, with a reported saving through the warnings of \$52,500.

The ice in the Missouri River in the vicinity of Bismarck broke up on March 21 and 22 and passed down the river with little damage. Ample warning of the event was issued. The crest stage at Bismarck was 14.6 feet, 0.4 foot below the flood stage.

In New England and eastern New York there was still on the ground an unusual amount of snow with a large water equivalent, excellent potential flood conditions which a few weeks later were resolved into actual ones of which mention will be made hereafter.

Owing to the comparative mildness of the last three consecutive winters the Connecticut River below East Hartford bridge has been continuously kept open for navigation, although on a few occasions the use of tugs was resorted to in order to maintain an open channel.

Flood stages during month of March, 1926

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
	<i>Feet</i>			<i>Feet</i>	
Susquehanna: Oneonta, N. Y.	12	26	26	12.2	26
Neuse: Smithfield, N. C.	14	15	15	14.0	15
Peedee: Mars Bluff, S. C.	17	1	2	17.7	1 and 2
		16	16	17.0	16
Santee:					
Rimini, S. C.	12	(1)	21	14.7	2 and 4
Ferguson, S. C.	12	(1)	22	13.5	3
Oconee: Milledgeville, Ga.	22	31	(2)	22.3	31
Ocmulgee:					
Macon, Ga.	18	31	(2)	20.0	31
Abbeville, Ga.	11	4	6	11.3	5
Altamaha: Everett City, Ga.	10	3	8	10.1	4, 5, 6
		11	15	10.0	11 to 15
EAST GULF DRAINAGE					
Chattahoochee: Columbus, Ga.	20	31	(2)	20.0	31
Tombigbee: Lock No. 4, Demopolis, Ala.	39	11	18	43.9	15
Pearl:					
Jackson, Miss.	20	10	23	27.0	16, 17, 18
Columbia, Miss.	18	23	26	19.0	25
West Pearl: Pearl River, La.	13	14	(2)	15.7	27
GREAT LAKES DRAINAGE					
Maumee: Napoleon, Ohio.	10	(1)	(1)	13.6	Feb. 27
St. Joseph: Montpelier, Ohio.	10	(1)	1	12.4	Feb. 27
		24	24	10.0	Mar. 24
Saginaw: Saginaw, Mich.	19	25	28	20.1	26
Shiawassee: Chesaning, Mich.	17	23	23	17.3	23
Flint: Flint, Mich.	11	23	27	13.9	25
Pine: Alma, Mich.	7	22	26	7.5	23
Cass: Vassar, Mich.	14	22	26	15.6	24
Grand:					
Eaton Rapids, Mich.	5	(1)	3	5.3	1
		20	31	5.7	26
Lansing, Mich.	11	21	24	11.4	22
Grand Ledge, Mich.	7	(1)	3	8.4	2
		7	7	7.0	7
		19	26	9.0	21-22
Lowell, Mich.	15	24	24	15.0	24
Grand Rapids, Mich.	11	22	29	13.3	25
Red Cedar:					
Williamston, Mich.	6	2	2	6.0	2
		20	25	8.5	20
East Lansing, Mich.	8	20	26	9.7	20
MISSISSIPPI DRAINAGE					
Allegheny: Franklin, Pa.	15	(1)	5	24.0	Feb. 26
		8	8	15.2	Mar. 8
		21	23	20.6	22
Shenango: Sharon, Pa.	9	25	25	9.2	25
Tuscarawas:					
Gnadenhutten, Ohio.	9	(1)	1	13.5	Feb. 27
		24	25	9.7	Mar. 24
Coshocton, Ohio.	8	(1)	(3)	10.6	Feb. 27

1 Continued from last month.
2 Continued at end of month.

* Below flood stage, 8 a. m., Mar. 1.
• Ice gorge.

Flood stages during month of March, 1926—Continued

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI DRAINAGE—continued					
Wabash:	<i>Feet</i>			<i>Feet</i>	
Lafayette, Ind.	11	(1)	1	16.2	27
Mount Carmel, Ill.	16	1	4	16.9	Mar. 3-4
Tippecanoe: Norway, Ind.	6	2	3	6.2	3
		22	23	6.1	22-23
White, West Fork: Edwardsport, Ind.	15	(1)	3	18.3	Feb. 28
		24	26	15.6	Mar. 25
Rock: Lyndon, Ill.	10	(1)	2	13.9	Feb. 27
Illinois:					
Peru, Ill.	14	(1)	12	17.8	27
Henry, Ill.	10	(1)	8	10.8	Mar. 3
Havana, Ill.	14	3	13	14.3	4-7
Beardstown, Ill.	14	3	15	14.7	7
Black:					
Corning, Ark.	11	(1)	9	12.2	2-3
		12	22	12.1	15-17
Black Rock, Ark.	14	12	16	15.2	13
Sulphur, Ringo Crossing, Tex.	20	24	25	20.4	24
WEST GULF DRAINAGE					
Sabine: Logansport, La.	25	24	31	28.9	27
Trinity:					
Dallas, Tex.	25	23	23	25.4	23
Trinidad, Tex.	28	27	29	28.9	28
Little: Little River, Tex.	30	11	11	34.7	11
PACIFIC DRAINAGE					
Gila: Kelvin, Ariz.	5	30	30	5.0	30

¹ Continued from last month.

MEAN LAKE LEVELS DURING MARCH, 1926

By UNITED STATES LAKE SURVEY

[Detroit, Mich., April 15, 1926]

The following data are reported in the Notice to Mariners of the above date:

Data	Lakes ¹			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during March, 1926:				
Above mean sea level at New York	<i>Feet</i> 600.19	<i>Feet</i> 577.52	<i>Feet</i> 570.02	<i>Feet</i> 244.14
Above or below—				
Mean stage of February, 1926	-0.08	+0.10	+0.12	+0.04
Mean stage of March, 1925	-0.55	-0.78	-0.91	-1.06
Average stage for March, last 10 years	-0.39	-2.19	-1.55	-1.26
Highest recorded March stage	-2.13	-5.43	-3.83	-3.67
Lowest recorded March stage	-0.47	-0.78	-0.81	-0.16
Average departure (since 1860) of the March level from the February level	-0.10	+0.15	+0.19	+0.26

¹ Lake St. Clair's level: In March, 1926, 572.28 feet.

THE EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, MARCH, 1926

By J. B. KINCER

General summary.—The prevailing cool weather east of the Mississippi River, and frequent precipitation in the interior and Southern States, made conditions generally unfavorable for farming operations during March over the eastern part of the country. In the South, the soil continued too wet during much of the month for the preparation of land and the seeding of spring crops, and it was too cool for proper germination of seed. There was also considerable frost damage to fruit and early vegetables in the Southeastern States about the middle of the month and, near the close, some additional harm

was reported in scattered localities in South-Central States and in the southern Rocky Mountain area.

In the central and northern portions of the trans-Mississippi States, where rainfall was light to moderate and temperatures seasonable, conditions were much better and seasonal farm operations made satisfactory advance. Precipitation was deficient in the northern Plains, however, and more moisture was needed over a considerable area of the Northwest. In the more western States, the generally mild weather and absence of storms were favorable for livestock, and there was sufficient rain in the far Southwest to materially improve range conditions. In the Pacific Coast States, vegetation advanced rapidly under the influence of the generally mild weather, and the season was well advanced.

The planting of cotton made slow progress, and very little had been put in at the close of the month, though considerable preparation of seed beds was accomplished. In the western belt a little cotton was planted the latter part of the month as far north as southern Arkansas, and in the east some was seeded locally northward to southern South Carolina.

Pastures and miscellaneous crops.—Over the great western grazing country the weather was generally favorable for the range, except that more moisture was needed in a few localities, particularly in parts of the Pacific Northwest. The mild temperatures were unusually favorable for lambing in the northern portions of the range country, and good results were reported. In the South pastures made fairly good progress.

There was considerable injury by frost to early fruit and vegetables in the Southeast about the middle of the month, and some were damaged in many localities over a belt extending from New Mexico, Oklahoma, and southern Kansas eastward near the close. Harm from low temperatures was more or less localized, however, and no extensive areas were affected. Minor spring crops needed warmth and sunshine throughout the Southern States.

Small grains.—The month was mostly favorable for winter wheat, though growth was slow because of cool weather, particularly in the central and eastern portions of the belt, where the late-seeded grain showed little progress; the early-seeded continued in satisfactory condition. In the western portion of the belt the crop was favorably affected by the prevailing weather and good advance was reported. Heavy precipitation over the south-central Great Plains near the close of the month was especially favorable for this crop. The seeding of spring wheat made normal advance under favorable weather conditions, but in some sections of the belt more moisture was needed for germination. Oat seeding made fairly good progress in the Central-Western States, but from the Mississippi Valley eastward this work was much delayed by the prevailing cool, wet weather. Grain crops made good advance in the far West.

Corn and cotton.—Plowing for corn was materially delayed from the Mississippi Valley eastward, and was at a standstill during much of the month because of persistently wet soil. It was also rather unfavorable for planting in the Southern States and too cool for good germination. In the Atlantic coast area conditions became somewhat more favorable the latter part of the month, and at its close some corn had been planted as far north as North Carolina. In the West some was seeded northward to the extreme southern Great Plains.